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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/536,551

12/01/2005

Jin-Wook Ha

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NORRIS, MCLAUGHLIN & MARCUS, P.A.
875 THIRD AVE
18TH FLOOR
NEW YORK, NY 10022

EXAMINER

LACLAIR, DARCY D

ART UNIT

PAPER NUMBER

1796

MAIL DATE

DELIVERY MODE

12/30/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/536,551	Applicant(s) HA ET AL.	
	Examiner Darcy D. LaClair	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 October 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 6-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 6-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. All outstanding rejections, except for those maintained below are withdrawn in light of the amendment filed on 10/1/2008.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

The new grounds of rejection set forth below are necessitated by applicant's amendment filed on 10/1/2008. In particular, **Claim 1** has been amended to recite that the flame retarding agent present from 10 – 30wt% is a ***phosphorous based*** flame retarding agent. This limitation was not present in the claims at the time of the preceding Office Action. Thus, the following action is properly made **FINAL**.

Claim Rejections - 35 USC § 103

2. **Claims 1-3, 6-12** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Yoshizawa et al. (US 3,760,037)**.

With regard to Claim 1, Yoshizawa teaches a phosphorous containing oligomer or polymer useful as flame resistant substances (see abstract) which can be incorporated in synthetic resins including polyacrylics and polyurethanes. (see col 5 line 12-15) In example 5, Yoshizawa exemplifies a composition used for coating a canvas having 15 parts of a copolymer of ethyl acrylate, acrylonitrile, and β -hydroxyethyl methacrylate (an acryl based polymer), 15 parts of a phosphorous compound (compound 6, see Reference Example 3 and Table 3), 10 parts of antimony trioxide, 70 parts of tolulol (toluene), and 1 part of butylated methylomelamine. This is a sum of 111

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parts, which gives 13.5% acryl based polymer, 13.5% phosphorous based flame retardant, 9% antimony trioxide, 63% toluene (diluting agent), and 0.9% of the butylated methylomelamine additive. (see Example 5, col 9 line 6-27) Acrylic polymers are water soluble. With the exception of the content of diluent, this is consistent with applicant's claimed ranges. Yoshizawa states that the blend of polymer, flame retardant and diluent yield a solution having a viscosity of 19,000 centipoises. The content of diluent is well known to be a result effective variable, with more diluent giving a less viscous and more dilute solution, and less diluent giving a more viscous and less dilute solution. It would be obvious to adjust the content of diluent (namely toluene) in order to obtain a solution with a viscosity appropriate to the particular coating application. See MPEP § 2144.05 (B). Case law holds that "discovery of an optimum value of a result effective variable in a known process is ordinarily within the skill of the art." See *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

With regard to Claim 2, Yoshizawa teaches that synthetic resins in which the phosphorous flame retardant may be incorporated include alkyds, polyurethanes, polyacrylics, and epoxides. (see col 5 line 12-15)

With regard to Claim 3, Yoshizawa exemplifies a copolymer having ethyl acrylate, acrylonitrile, and β -hydroxyethyl methacrylate. (See Example 5, col 9, line 7-10) This is a copolymer having alkylmethacrylate and alkylacrylate components.

With regard to Claim 6, toluene (or toluene) is used as the diluent. (see Example 5, col 9 line 11) Yoshizawa also indicates that the phosphorous based flame retardant is soluble in low aliphatic alcohols and methyl ethyl ketone. (see col 5 line 41-42)

With regard to Claim 7 and 8, Yoshizawa exemplifies coating the paste on both faces of a vinylon-cotton canvas, and air drying at 100°C to achieve a finished coated canvas. (See Example 5, col 9, line 18-20) This air drying step constitutes a treatment, and requires heating to achieve the exemplified temperature.

With regard to Claim 9 and 11, see the discussion of Claims 2 and 3, above.

With regard to Claim 10 and 12, see the discussion of Claim 6, above.

Response to Arguments

3. Applicant's arguments filed **10/1/08** have been fully considered. Specifically, applicant argues **(A)** Claim 4 has been cancelled, and therefore the claim objection for failing to further limit the subject matter of a previous claim is moot, **(B)** by the amendment of claim 1 with subject matter from previous (now cancelled) claim 5, specifically reciting the flame retardant aids, the amended claim 1 now overcomes the anticipation rejection over Hourai et al., **(C)** Inukai does not teach or suggest 10 – 30% wt of a phosphorous based flame retarding agent or flame retardant additives, and **(D)** the rejection of claim 5 is moot based on its cancellation.

With respect to argument (A) and (D), applicant's arguments have been considered and the objection and rejection are withdrawn in light of the cancellation of claims 4 and 5.

With respect to argument (B) and (C), applicant's arguments have been considered and have been withdrawn ***in light of applicant's amendments***. Applicant will take note that newly applied reference Yoshizawa does disclose both the amount

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and kind of flame retarding agent presently within the scope of the newly amended claims as described in **paragraph 2**, above.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Darcy D. LaClair whose telephone number is (571)270-5462. The examiner can normally be reached on Monday-Friday 8:30-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Darcy D. LaClair
Examiner
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/DDL/

/Vasu Jagannathan/

Supervisory Patent Examiner, Art Unit 1796